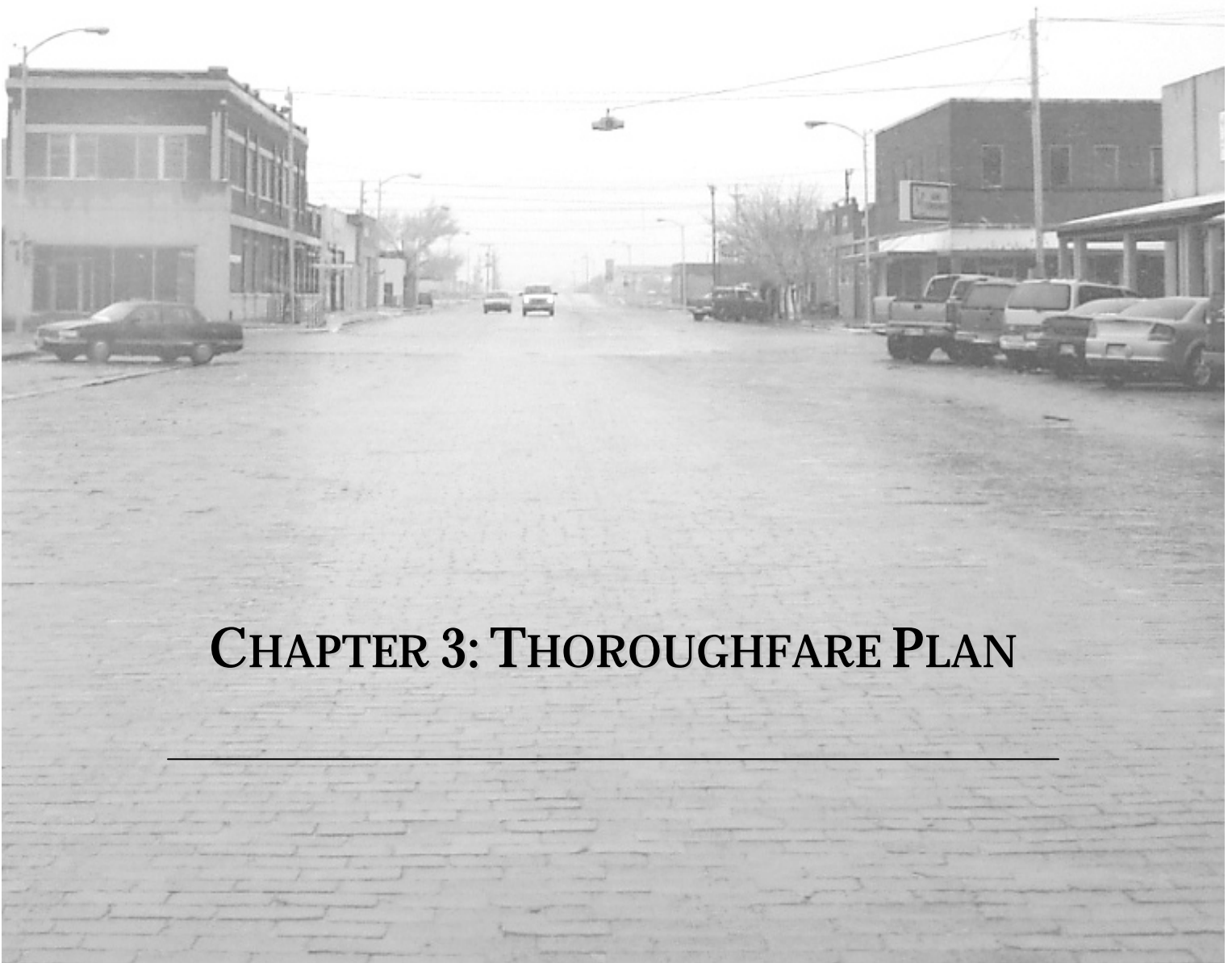


CITY OF BROWNFIELD

2006 COMPREHENSIVE PLAN



CHAPTER 3: THOROUGHFARE PLAN

TABLE OF CONTENTS: CHAPTER 3

Introduction.....	3-1
The Functional Classification System & Related Level of Service	3-2
Level of Service.....	3-4
Mobility & Access Regionally & Locally	3-5
The Regional Transportation System.....	3-5
Traffic Analysis	3-5
Plate 3-1: Traffic Counts	3-6
The Brownfield Transportation System.....	3-7
Highway.....	3-7
Major Streets	3-7
Plate 3-2: Thoroughfare Plan	3-8
Collector Streets.....	3-9
Minor or Residential	3-9
Rural Roadway	3-10
Meeting the Current and Future Needs of the City.....	3-10
Compatibility with the Future Land Use Plan.....	3-10
Existing Residential and Nonresidential Land Uses	3-11
Safety and Physical Improvements.....	3-11
Funding Thoroughfare System Improvements.....	3-12
Street Improvement Program.....	3-12
Conclusion.....	3-12

Introduction

A community's thoroughfare system is vital to its ability to grow and attract businesses. Transportation is directly linked to land use. The type of roadway dictates the use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. A prime example of the interrelated nature of land use and transportation within Brownfield is U.S. Highway 380 and U.S. Highway 62/82 - the high traffic volumes of these roadways have resulted in an abundance of nonresidential development along their frontages. Retail and other nonresidential land uses have and will continue to seek locations in areas with high visibility and accessibility.



*Illustration 3-1
Office Building along HWY 380*



*Illustration 3-2
Retail Development along HWY 380*

This Thoroughfare Plan should be viewed as a continuing planning effort that supplements and refines previous recommendations in light of changes that may have occurred since 1981. Clearly, many of the decisions regarding land uses and roadways within Brownfield have already been made; rights-of-way in the developed areas of the City were established and roadways were constructed years ago. Major challenges for Brownfield now are:

- the safety and maintaining the integrity of the existing thoroughfare system,
- accommodation of business growth within the existing thoroughfare system, and
- new land development through the expansion of that system into undeveloped areas.



*Illustration 3-3
Retail Development along HWY 62/82*

This Thoroughfare Plan, which is based on stated goals and objectives within Chapter 2 of this Comprehensive Plan, recommends various ways in which the City can effectively meet these challenges.

The Functional Classification System & Related Level of Service

The Thoroughfare Plan for Brownfield is based upon a classification system that recognizes that every roadway within the City can be described according to its function. Thoroughfare types, as discussed in the following sections, generally include major roadways (highways and arterials), collector roadways, and minor or residential streets. Functional aspects of the roadway, including mobility and access, generally differentiate these classifications. **Illustration 3-4** graphically depicts these functional differences. As the illustration shows, *access* decreases as the thoroughfare type changes from local streets to highways, while *mobility* increases. It also shows that major roadways (i.e., highways and arterials) that are intended to provide mobility should not be compromised by an abundance of separate access points for land uses. This will be addressed later within this Thoroughfare Plan.

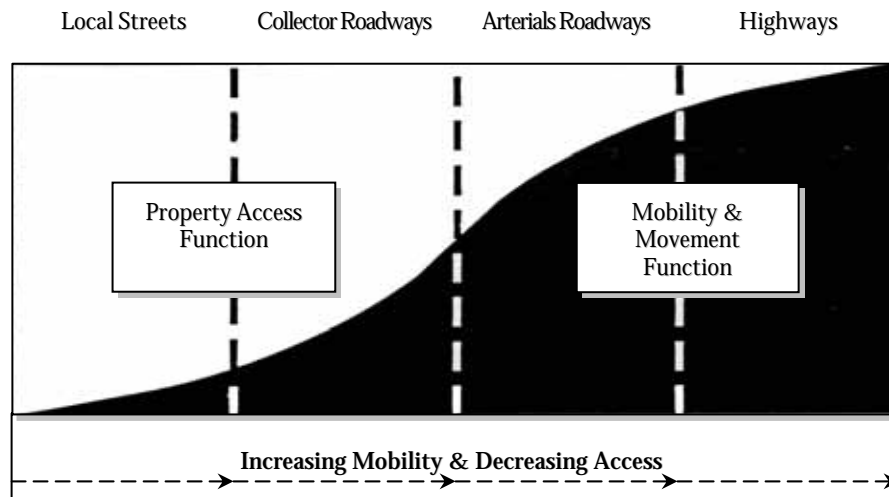


Illustration 3-4
Functional Classification System

Table 3-1, on the following page, describes the roadway types shown in **Illustration 3-4** in relation to various characteristics such as their respective continuity, distance spacing, intersection spacing, and on-street parking. This should be used as a reference for the discussion herein.

TABLE 3-1
Roadway Functional Classifications & General Planning Guidelines

TYPE OF ROADWAY	Function	Approx. Spacing	Direct Land Access	Minimum Roadway Intersection Spacing ⁽³⁾	Speed Limit (mph)	Parking	Comments
FREEWAYS (Loop 289, IH-27)	Traffic Movement	4 miles minimum	None/limited (to frontage roads)	1 mile	60 to 70 mph	None	Supplements capacity & major thoroughfare system; provides high-speed mobility.
STATE HIGHWAYS, MAJOR STREETS (HWY 380, HWY 137 HWY82, Old Lamesa Rd.)	Moderate distance inter-community traffic	1/2 to 1 1/2 ⁽¹⁾ miles	Restricted; some movements may be prohibited; Number & spacing of driveways controlled; May be limited to major traffic generators on regional routes.	1/8 mile 1/4 mile on regional route	35 to 55 mph	None	"Backbone" of the street system.
COLLECTOR STREETS (Ballard St., 8 th St.)	Collect/distribute traffic between local & major streets; Direct land access; Between neighborhood traffic movement.	1/4 to 1/2 ⁽²⁾ mile	Safety controls; limited regulation. Residential access allowed; commercial access allowed.	300 feet	35 to 30 mph	Limited	Through traffic generally discouraged.
MINOR AND RESIDENTIAL STREETS	Land Access	As needed	Safety controls only.	200 feet	30 mph	Permitted	Through traffic should be discouraged.

⁽¹⁾ Spacing determination should also include consideration of (travel projections within the area or corridor based upon) ultimate anticipated development.
⁽²⁾ Denser spacing needed for commercial and high-density residential districts.
⁽³⁾ Spacing and intersection design should be in accordance with state and local thoroughfare standards.

LEVEL OF SERVICE

The phrase “level of service” refers to the level of adequateness with which a roadway (or segment of roadway) is serving the transportation needs of those utilizing it. As **Table 3-2** shows, the descriptions of each level of service relates to how traffic is flowing, maneuverability, and operational problems. Most roadways within the City can generally be described as providing a high level of service. Level of service “C” is considered to be acceptable in most cities across Texas. Generally, level of service “D” is used by municipalities to justify the need for roadway improvements. Most roadways appear to be operating at level of service “C” or better in Brownfield today. The City should ensure that local roadways continue operating at a level of service “C”.

<i>Table 3-2 Definition of Level of Service for Roadway Links</i>		
Level of Service (LOS)	Description	Example
A and B	Light, free-flowing traffic volumes. Virtually no delays with smooth progression of traffic, and speed is generally unaffected by other vehicles. Slight decline in the freedom to maneuver from A to B.	Residential or rural streets
C	Basically satisfactory to good progression of traffic, but at that point where individual drivers become affected by interactions with other vehicles. Light congestion, and speed is affected by the presence of other vehicles.	Urban thoroughfares at off-peak hours
D	High density, but stable, traffic flow. Speed and freedom to maneuver are restricted. Small increases in traffic flow will cause significant operational problems. This LOS is generally used to justify thoroughfare improvements.	Secondary streets at peak hours
E	Operating conditions at or near capacity level. All speeds are reduced to low, but remain relatively uniform, meaning generally not stop-and-go. Operations at this level are usually unstable, because small increases will cause severe speed reductions.	Primary streets at peak hours
F	Forced flow. Heavy congestion. Total breakdown with stop-and-go operation. Queues (i.e., vehicle stacking) at intersections on these lengths may exceed 100 vehicles.	Developed areas in larger cities at the A.M. or P.M. peak hours
Source: Dunkin, Sefko, & Associates		

Mobility & Access Regionally & Locally

THE REGIONAL TRANSPORTATION SYSTEM

The City of Brownfield is situated along five Highways:

- U.S. Highway 62,
- U.S. Highway 82,
- U.S. Highway 385,
- U.S. Highway 380, and
- State Highway 137.

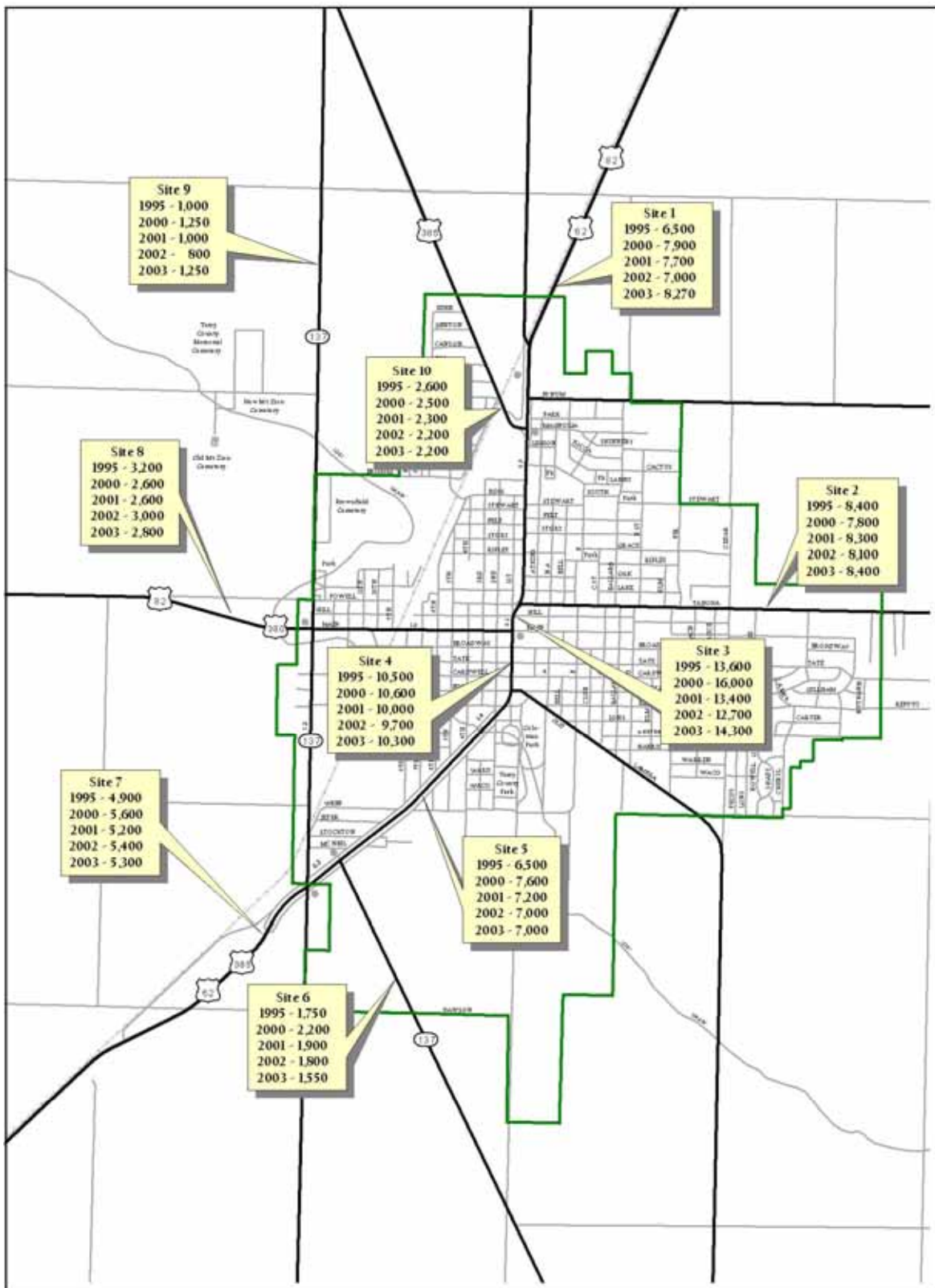
These roadways contribute heavily to both the City's regional transportation and the area's economic development. Highways such as U.S. Highways 380, 62, and 82 serve a critical transportation route for people traveling to and from Texas and New Mexico. Annual average traffic counts, discussed in the following section, reveal that the most heavily trafficked area in Brownfield is the intersection U.S. Highway 380 and U.S. Highway 62/82, with 14,300 vehicles passing this point on an average day.

TRAFFIC ANALYSIS

The Texas Department of Transportation (TxDOT) annually conducts surveys to determine the amount of traffic on roadways throughout Texas. An analysis of past TxDOT surveys for the Brownfield area can provide insight into existing traffic patterns. The knowledge gained from these surveys, such as increases in the amount of traffic and the intensity of that traffic, can be used to assist the City in providing the most efficient transportation infrastructure possible. Ten sites and the corresponding traffic count information have been taken from the 1995, 2000, 2001, 2002, and 2003 TxDOT District Highway Traffic Maps. **Table 3-3** and **Plate 3-1** represents the average daily traffic counts for each location. Overall, five sites experienced increases in traffic, and three sites experienced traffic decreases, and two sites experienced no change. The largest numerical increase occurred at site 3 near Downtown. Also, Highway 62/82 (Lubbock Highway), north of the city, experienced a notably increase in traffic. Lubbock's recent growth has been to the west, and as those areas increase in price and build out, Brownfield could benefit from the growth.

Year	Site 1 HWY 62/82 (North)	Site 2 HWY 380 (East)	Site 3 HWY 62/82 @ HWY 380	Site 4 HWY 62 @ Tate	Site 5 HWY 62 @ 7th Street	Site 6 HWY 137 (South)	Site 7 HWY 62 (South)	Site 8 HWY 380 (West)	Site 9 HWY 137 (North)	Site 10 HWY 385 (North)
1995	6,500	8,400	13,600	10,500	6,500	1,750	4,900	3,200	1,000	2,600
2000	7,900	7,800	16,000	10,600	7,600	2,200	5,600	2,600	1,250	2,500
2001	7,700	8,300	13,400	10,000	7,200	1,900	5,200	2,600	1,000	2,300
2002	7,000	8,100	12,700	9,700	7,000	1,800	5,400	3,000	800	2,200
2003	8,270	8,400	14,300	10,300	7,000	1,550	5,300	2,800	1,250	2,200
Percent Change (From 2002-2003)	18%	4%	13%	6%	0%	-14%	-2%	-7%	56%	0%
Number Change (From 2002-2003)	1,270	300	1,600	600	0	-250	-100	-200	450	0

Source: Texas Department of Transportation





Traffic Counts

(Average Daily Counts)

Plate 3-1



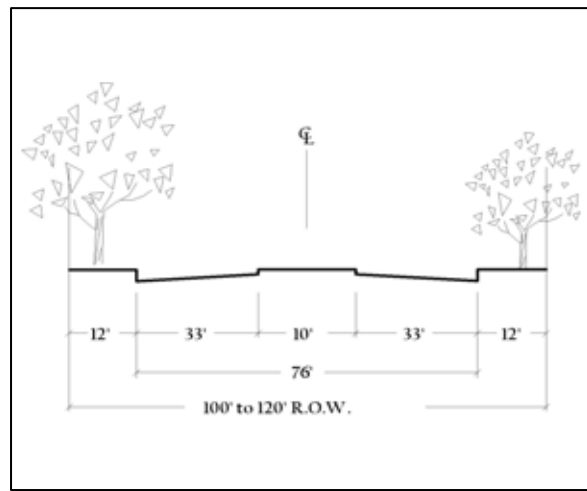

Dunkin Selko & Associates, Inc.
Urban Planning Consultants Dallas, Texas
Date: May 2008

THE BROWNFIELD TRANSPORTATION SYSTEM

The following sections contain roadway sections for the applicable types of roadways shown on the Thoroughfare Plan map. The cross-sections are intended to help the City provide for adequate mobility along high-traffic roadways, while also providing for access to local land uses. These cross-sections are generally consistent with the City's current requirements for roadway widths within the adopted Subdivision Ordinance. The Thoroughfare Plan map, **Plate 3-2**, shows the existing roadways and future recommended roadways according to the hierarchical system defined herein.

Highway

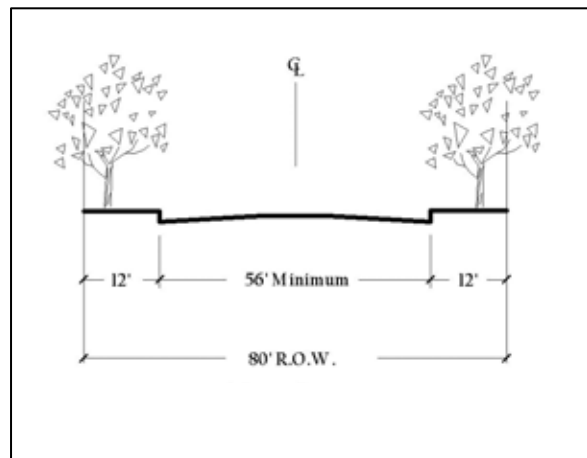
The recommended right-of-way for a highway is shown within **Illustration 3-5**. At 120 feet of right-of-way, this is the largest cross-section for the City. Examples of highways for this cross-section would be Highway 380 and Highway 82.



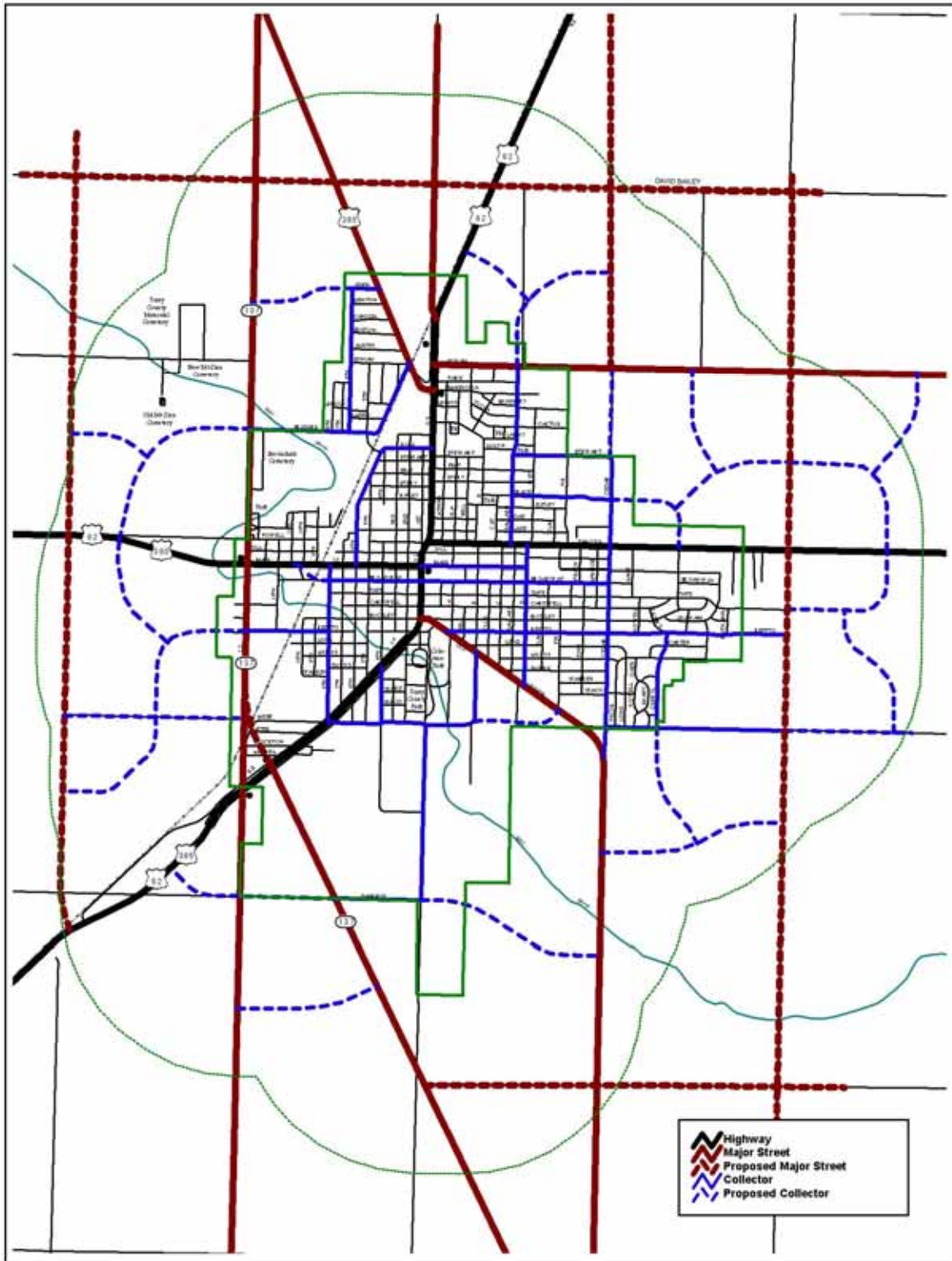
*Illustration 3-5
Highway*

Major Streets

The recommended right-of-way for a major street is shown within **Illustration 3-6**. At 80 feet of right-of-way and 56 feet of paving, this recommendation is consistent with the City's current major street classification found within the Subdivision Ordinance.



*Illustration 3-6
Major Street*



City of BROWNFIELD

Thoroughfare Types

Plate 3-2

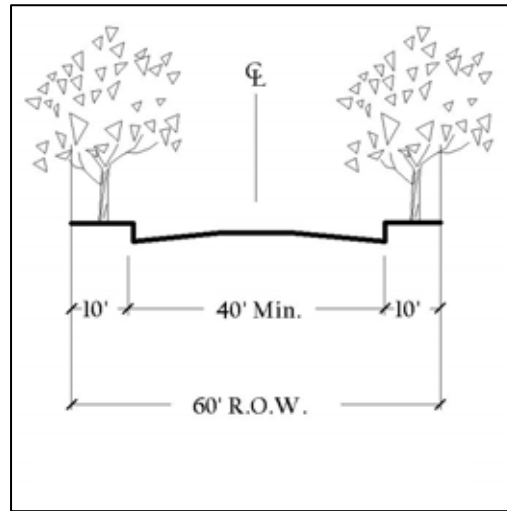
Major Street Major Street Collector Major Street Road Frontage

Thoroughfare Plan

Durkin Sefko & Associates, Inc.
Urban Planning Consultants • Dallas, Texas
Date: May 2006

Collector Streets

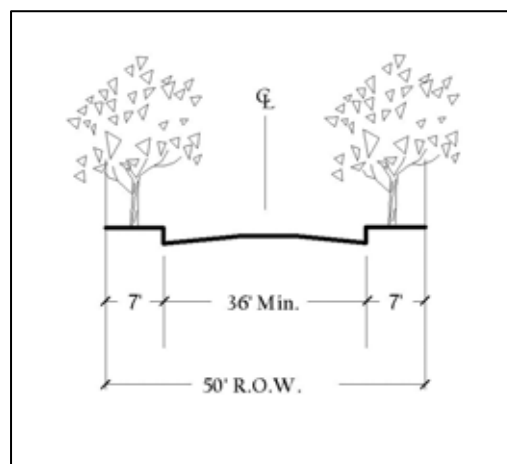
The recommended right-of-way for a collector street is shown within **Illustration 3-7**. At 60 feet of right-of-way and 40 feet of paving, this recommendation is consistent with the City's current collector street classification found within the Subdivision Ordinance.



*Illustration 3-7
Collector Street*

Minor or Residential

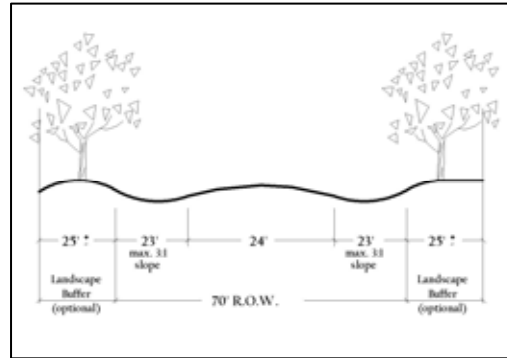
The recommended right-of-way for a minor or residential street is shown within **Illustration 3-8**. At 50 feet of right-of-way and 36 feet of paving, this recommendation is consistent with the City's current collector street classification found within the Subdivision Ordinance. The paving requirement could be reduced based on engineering design standards.



*Illustration 3-8
Minor or Residential Street*

Rural Roadway

The recommended right-of-way for a rural roadway is shown within **Illustration 3-9**. At 70 feet of right-of-way and 24 feet of paving, this recommendation is designed to serve the rural areas of the City and carry light volumes of traffic.



*Illustration 3-9
Rural Roadway*

Meeting the Current and Future Needs of the City

A number of issues must be considered in the process of developing the Thoroughfare Plan for Brownfield.

- First, the Plan must be compatible with the City's Future Land Use Plan (Chapter 4) and related growth and development considerations.
- Second, it must address the integrity of existing residential and nonresidential areas; the Plan must balance functions of the thoroughfare system through efficient moving of traffic and facilitating access requirements.
- Third, it must consider both alignments and right-of-way issues.
- Finally, the Thoroughfare Plan must also incorporate realistic recommendations within the context of budgeting constraints.

The following discussion addresses these issues.

COMPATIBILITY WITH THE FUTURE LAND USE PLAN

Land use and roadway planning are closely linked; just as inappropriate land uses can reduce the effectiveness of adjacent roadways, poorly planned roadways and lack of access standards can reduce the viability of adjacent land uses. Inappropriate zoning, various types of development activity, the existence of older roadways that now carry higher traffic volumes than originally intended, and continually changing traffic patterns can have negative impacts on the City's thoroughfare system. Brownfield should consider access (driveway) spacing standards for land uses located on major streets and collector streets in order to promote a smooth flow of traffic and to minimize the impact

of individual developments on the safe and efficient function of these roads. These standards should also be coordinated with TxDOT access management guidelines (June 2003). The different mobility and access needs of residential and nonresidential land uses are recognized within the Future Land Use Plan and have resulted in the various land use location recommendations therein.

EXISTING RESIDENTIAL AND NONRESIDENTIAL LAND USES

As **Plate 3-2** shows, the importance of continued access to nonresidential uses has been reflected primarily in the recommendations for major thoroughfares in areas of the City that are characterized by high concentrations of nonresidential uses. The thoroughfare system as it exists today in Brownfield has evolved over decades. The State highways in Brownfield form the basis for much of the Thoroughfare Plan. Many areas of the City have been previously developed with rights-of-way and land uses firmly in place. Therefore, opportunities for improving traffic flow and access in such areas will mainly be the product of access management, street maintenance and widening, wherever possible. It is not the intent of this Thoroughfare Plan to endorse the displacement of existing businesses or residences. Existing roadways should generally only be widened to the widths recommended herein wherever existing rights-of-way allow.

SAFETY AND PHYSICAL IMPROVEMENTS

During the development of the Thoroughfare Plan, citizens communicated a need for several improvements regarding the safety and physical design of the City's thoroughfares. First, the most pressing need identified was improving the safety of several intersections within the City. A review of the location of major accidents, furnished by the Brownfield Police Department, indicated that the intersections of Seagraves Road (HWY 62) at 14th Street and Seagraves Road (HWY 62) at 8th Street have experienced major accidents. The citizens involved in the planning process identified these intersections as areas where safety was a concern. The City should investigate and discuss with TxDOT operational policies to improve the safety at these major intersections. Options such as lighting (i.e., traffic lights, flashing lights, better directional signage, warning signs, etc.) should be considered to improve these intersections.

Second, citizens identified road improvements as an important issue. The roads around the high school were a concern due to the heavy traffic associated with this land use. Methods to improve the streets and traffic circulation around the high school area should be reviewed (e.g., improved signage). Citizens also discussed the improvement and widening of Cedar Street and extending it north to the Lubbock Highway as a possible construction improvement project. This road is shown on the Thoroughfare Plan as a major street and should be reviewed for improvement and/or an extension to the Lubbock Highway.

Finally, with above average rainfall totals for 2004, drainage issues were frequently discussed. Most of the City's drainage is surface drainage (as is with most West Texas cities). At certain times, some roadways within the City carry heavy drainage, which may cause potential problems for motorists or landowners (e.g., Broadway Street and B Street, Buckley Street and B Street, Tahoka Road and B Street, Broadway Street and Cheryl Drive, Tate Street and South A Street, the section of Tahoka Road in front of the Family Dollar Store [500 block], and sections of Cedar Street). It is recommended that the City inventory the streets and/or intersections with significant drainage problems and investigate methods to remedy these problems.

FUNDING THOROUGHFARE SYSTEM IMPROVEMENTS

In addition, maintaining an efficient street network requires significant investment of local resources. Careful planning is needed to ensure that Brownfield makes the most cost-effective investments in its street network. Funding is usually based upon general obligation bonds or the general fund budgeting process. The City should also coordinate efforts with regional transportation-related agencies, such as the Texas Department of Transportation (TxDOT) and South Plains Association of Governments (SPAG) in order to maximize the potential for shared financing. Consistent participation in SPAG planning efforts may also help Brownfield foster relationships that would ultimately help with funding improvements.

STREET IMPROVEMENT PROGRAM

Since much of Brownfield's roadway system is established and TxDOT maintains the major highways, it is recommended that the City establish an annual street improvement program. This program would be different from routine maintenance. The program would be a "reconstruction and improvement" program and should establish a percentage of unpaved roads to be paved annually. It is recommended that the City allocate \$320,000 per year for street reconstruction and improvement. Generally, the first streets in the program should be collector streets shown on the Thoroughfare Plan with residential streets a second priority. The following streets should be considered initially:

- Cedar Street,
- David Bailey, (between Cedar Street and Pecan Street)
- Webb Street,
- Ballard (north of Tahoka Highway),
- Ross Street, and
- 6th Street.

Conclusion

Implementation of the Thoroughfare Plan will require consistent administration by the City. It is not suggested that the City engage in a major thoroughfare construction program as the present system will be adequate for the near term. As development

occurs, right-of-way should be secured for widening of new roads. Design and technical standards should continue to be contained within the City’s adopted Subdivision Ordinance and should be consistently reviewed to ensure that such practices are uniform in terms of required size of rights-of-way and access controls along rights-of-ways. Brownfield’s recommended Thoroughfare Plan policies are summarized on the following page within **Table 3-4**.

<p><i>Table 3-4</i> Thoroughfare Plan Recommendations City of Brownfield, Texas</p>
<p><u>Level of Service Standard</u></p> <p>The City should ensure that local roadways continue operating at a level of service “C”. (Refer to Table 3-2).</p>
<p><u>Brownfield Transportation System: Rural Cross-Section</u></p> <p>Add a new rural cross-section for one acre or larger development should be added to the City’s Subdivision Ordinance.</p>
<p><u>Brownfield Transportation System: Existing Cross-Sections</u></p> <p>The City should maintain the existing cross-sections found within its Subdivision Ordinance.</p>
<p><u>Compatibility with the Future Land Use Plan: Access Spacing Standards</u></p> <p>Brownfield should consider access (driveway) spacing standards for land uses located on major streets and collector streets in order to promote a smooth flow of traffic and to minimize the impact of individual developments on the safe and efficient function of these roads.</p>
<p><u>Compatibility with the Future Land Use Plan: Access Standards and TxDOT Coordination</u></p> <p>Access (driveway) spacing standards should also be coordinated with TxDOT access management guidelines</p>
<p><u>Existing Residential and Nonresidential Land Uses</u></p> <p>It is not the intent of this Thoroughfare Plan to endorse the displacement of existing businesses or residences. Existing roadways should generally only be widened to the widths recommended herein wherever existing rights-of-way allow.</p>
<p><u>Safety and Physical Improvements: Intersections</u></p> <p>The City should investigate and discuss with TxDOT operational policies to improve the safety at major intersections. Options such as lighting (i.e., traffic lights, flashing lights, better directional signage, warning signs, etc.) should be considered to improve these intersections.</p>
<p>Note: Not in any order of priority. Source: City of Brownfield’s Thoroughfare Plan.</p>

<i>Table 3-4 (Continued)</i> <i>Thoroughfare Plan Recommendations</i> <i>City of Brownfield, Texas</i>
<u>Safety and Physical Improvements: Review High School Area</u> Methods to improve the streets and traffic circulation around the high school area should be reviewed (e.g., improved signage).
<u>Safety and Physical Improvements: Cedar Street Extension</u> Cedar Street is shown on the Thoroughfare Plan as a major street and should be reviewed for improvement and/or an extension.
<u>Safety and Physical Improvements: Address Intersection Flooding</u> Inventory the streets or intersections with significant drainage issue and investigate methods to remedy drainage problems.
<u>Thoroughfare System Improvements Funding</u> The City should also coordinate efforts with regional transportation-related agencies, such as the Texas Department of Transportation (TxDOT) and South Plains Association of Governments (SPAG) in order to maximize the potential for shared financing.
<u>Street Improvement Program: Paving</u> The City should establish a percentage of unpaved roads to be paved annually.
<u>Street Improvement Program: Funding</u> Allocate \$320,000 annually to a street “reconstruction and improvement” program.
Note: Not in any order of priority. Source: City of Brownfield’s Thoroughfare Plan.